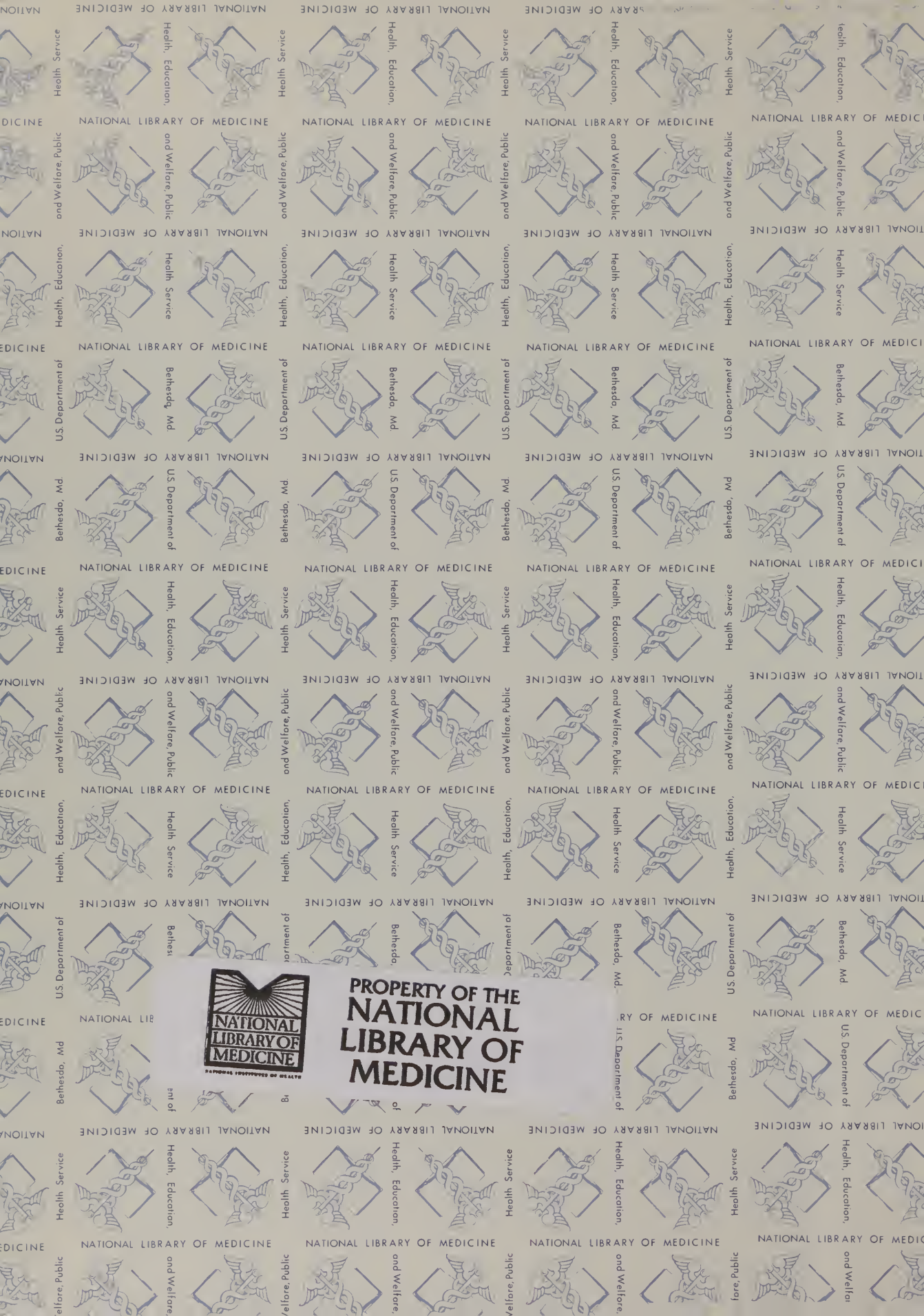
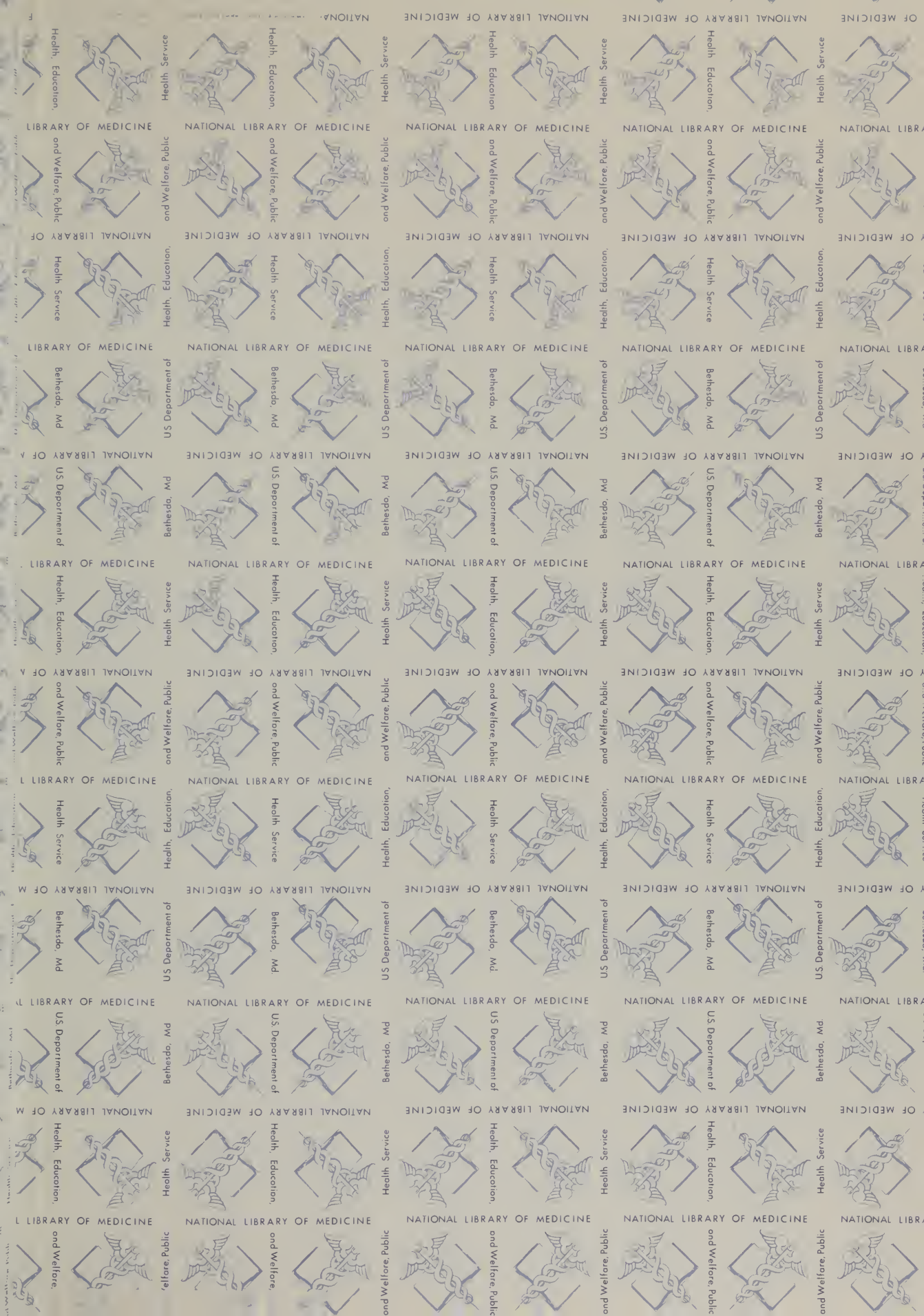

NATIONAL LIBRARY OF MEDICINE
Health, Education, and Welfare, Public Health Service
U.S. Department of Bethesda, Md.
PROPERTY OF THE
NATIONAL
LIBRARY OF
MEDICINE


NATIONAL LIBRARY OF MEDICINE
Health, Education, and Welfare, Public Health Service
U.S. Department of Bethesda, Md.

PHARMACY
and
PHARMACOLOGY

MEDLARS
Indexing Instructions

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service
National Institutes of Health
National Library of Medicine

PHARMACY AND PHARMACOLOGY
MEDLARS
Indexing Instructions

by
Thelma Charen

NATIONAL LIBRARY OF MEDICINE
Index Section BSD
1969

Z
695.9
C472p
1969

NATIONAL LIBRARY OF MEDICINE
BETHESDA 14, MD.

WO 02 1 Ag 69

PREFACE

Since so much active research in medicine today is devoted to drugs, their pharmacology and therapeutic use, it is natural then, in turn, that much of the literature indexed in INDEX MEDICUS be devoted to journals from the fields of pharmacy, pharmacology and drug therapy, with an important offshoot, the field of toxicology.

Because of the widespread interest in drugs and their effects, we have compiled this brochure entitled PHARMACY AND PHARMACOLOGY: INDEXING INSTRUCTIONS. Its purpose is to give MEDLARS Analysts hints on approaches to the indexing and retrieval of articles in the aforementioned fields.

This indexing guide is intended primarily for the use of MEDLARS Analysts at the National Library of Medicine and at MEDLARS and Indexing Centers.

TABLE OF CONTENTS

	Page
Preface	i
Scope of Pharmacology	1
Indexing Policy	4
Geographic Headings	8
Provisional Headings	10
Check Tags	11
Subheadings	13
Injurious Effects of Drugs	21
References and Tools	23
Appendix I: Subcategory B6	26
Appendix II: MeSH Headings 1969 ...	32
Appendix III: Category D	46
Appendix IV: NIM Headings	48
Appendix V: Indexing Instructions..	50
Appendix VI: Pharmacy, Pharmacology and Toxicology Journals	61

PHARMACY AND PHARMACOLOGY

INDEXING INSTRUCTIONS

Scope of Pharmacology

If one thinks of pharmacology as the study of drugs in the broadest sense, it can be said to be divided, then, into pharmacognosy, pharmacy, pharmacodynamics, pharmacotherapeutics and toxicology. To a MEDLARS Analyst the field would be arrayed thus:

PHARMACOLOGY
- PHARMACOGNOSY
- PHARMACY
- *pharmacodynamics
- DRUG THERAPY
- TOXICOLOGY

Before we enter into the details of indexing instructions for this field, we should define the subdivisions of pharmacology to show the MEDLARS Analyst the professional and intellectual scope of each. A brief reference will document each definition; the detailed bibliographical reference will be found in the section of this brochure entitled "Reference and Tools."

Pharmacology will be understood to be the sum of all "knowledge of the history, source, physical and chemical properties, compounding, biochemical and physiological effects, mechanisms of action, absorption, distribution, biotransformation and excretion, and therapeutic and other uses of drugs" (Goodman & Gilman).

Pharmacognosy is etymologically from the Greek for "the knowledge of drugs": pharmaco for drugs and gnosis for knowing, the same gnosis as in diagnosis and pro-gnosis. Pharmacognosy "deals with the origin, structure and chemical composition of crude drugs. The obsolescent title 'Materia Medica' includes also the action and uses, now generally called 'Pharmacology'" (Sollmann).

A broader definition speaks of it as the "science which treats of the history, production, commerce, collection, selection, identification, valuation, preservation and use of drugs and other economic materials of plant and animal origin" (Youngken). Another textbook of pharmacognosy extends the concept of "crude drug" to minerals too (Wallis).

The word "pharmacognosy" itself is little used in American literature. In the 1968 CUMULATED INDEX MEDICUS of only 12 entries under PHARMACOGNOSY, 11 were foreign; the root "pharmacognos-" appeared in eight of these foreign titles.

Pharmacy is the "preparing, compounding and dispensing of medicines" (Goodman & Gilman).

Pharmacodynamics is "the study of the biochemical and physiological effects of drugs and their mechanisms of action... the absorption, distribution, biotransformation and excretion of drugs" (Goodman & Gilman).

Pharmacotherapeutics is "the use of drugs in the prevention and treatment of disease" (Goodman & Gilman).

Toxicology "is the science of the noxious effects of drugs. It is concerned not only with drugs used in therapy but also with the many other chemicals that may be responsible for household, environmental, or industrial intoxication" (Goodman & Gilman).

The Food, Drug and Cosmetic Act defines drugs as "(1) articles recognized in the official United States Pharmacopeia, official Homoeopathic Pharmacopoeia of the United States, or official National Formulary, or any supplement to any of them; and (2) articles intended for use in the diagnosis, cure, mitigation, treatment, or prevention of disease in man or other animals; and (3) articles (other than food) intended to affect the structure or any function of the body of man or other animals; and (4) articles intended for use as a component of any articles specified in clause (1), (2), or (3); but does not include devices or their components, parts, or accessories."

The MEDLARS Analyst will accept the term "drug" as defined above, of course, but will as usual broaden "drug" to be used interchangeably with the word "chemical" and, in fact, both "drug" and "chemical" will be used loosely to relate to all Category D terms.

Pharmaceutics as a specialty is a synonym for the word "pharmacy"; as a substance (or, as the excerpt above says, article), it will be considered a synonym for "drug" as defined above.

The instructions in this brochure will deal predominantly with pharmacy and hints on the indexing approach to this field. Pharmacology will be handled in its broadest sense as the field and as it overlaps pharmacy. Its interpretation as pharmacodynamics will be handled here only in passing.

INDEXING POLICY

In the field of pharmacy, all the usual patterns of indexing under MEDLARS will obtain. In this field as in all others, the analyst will adhere to the policy of indexing both for publication in INDEX MEDICUS (IM) and for storage in the MEDLARS computer for retrieval upon demand (NIM or non-INDEX MEDICUS). Too, the indexer will follow the principle of depth and non-depth indexing as outlined in the MEDLARS Indexing Manual.

Obviously there is no need to repeat here what is in the Indexing Manual regarding the indexing of drugs and chemicals. All specific details concerning indexing principles for Category D (Chemicals and Drugs) are found in the MEDLARS Indexing Manual in sections 18.1 through 18.35. Instructions on headings from other categories of interest to pharmacy, pharmacology and toxicology are given throughout the manual. These instructions can be found by merely looking up the term in the index to the manual and following through as instructed.

We shall give below a brief summary of indexing the literature of pharmacy and pharmacology in the most general terms.

1. Index a drug or chemical as specifically as possible, using the term as given in MEDICAL SUBJECT HEADINGS (MeSH).

2. If a drug or chemical is not in MeSH, index under a chemical heading which applies, making it IM (i.e., indicate it for publication in INDEX MEDICUS) and also whenever possible under a function group (ANTIHYPERTENSIVES; ANALGESICS AND ANTIPYRETICS; TRANQUILIZING AGENTS; etc. - drugs with a designed action) as discussed in the article. Make this also IM. Use the same subheading for both.

3. If a drug is a compound related to a MeSH term, or a homolog of a MeSH term or a simulant or a derivative, index under the MeSH term provided it is a plural chemical (PHENOTHIAZINES; AZOLES; SULFONAMIDES).

4. If a drug is a homolog, derivative, simulant or related compound of a MeSH term but the MeSH heading is not a plural chemical or a group name, submit the article for indexing to the Chemical Indexer who will determine the correct MeSH heading under which the article is to be indexed.

5. Index drugs and chemicals as IM and technics for determining their structure or presence in other substances or in biological matter as NIM (i.e., non-INDEX MEDICUS or indicated for storage in the computer for future retrieval).

6. Index drugs and chemicals as IM but technics for studying them or administering them experimentally or therapeutically as NIM.

7. See pages 35-40 for a list of MeSH technics and methods which are almost always NIM when a specific drug or chemical is IM.

8. If a technic for studying, analyzing or administering a drug or chemical is specific to that drug, make it NIM, whether or not the technic is stated in the title of the article.

9. If, however, the author states that the technic is new or if the author states and the analyst feels that it has a wide application beyond the specific chemical the author is writing about, the analyst may make the technic IM. This is not usual.

10. Index the chemistry or chemical structure of a drug under the name of the drug without a subheading (IM) and the coordinate CHEMISTRY (NIM).

11. See Appendix IV for specific CHEMISTRY coordinates which are almost always NIM.

12. Index the in vitro chemical interaction of one drug with another under the name of each drug or chemical without a subheading, making each IM. Coordinate with CHEMISTRY (NIM).

13. Index the synthesis of one drug from another (see the definition of *chem synthesis on page 16) under the name of the drug being synthesized with the subheading *chem synthesis (IM) and the name of the drug from which it is being synthesized without a subheading (IM or NIM depending upon the point of the article).

    Synthesis of quinolines
    from aromatic amines:

    QUINOLINES *chem synthesis (IM)
    AMINES (IM)

14. Index the isolation of one drug from another under the name of the drug being isolated, with the subheading *isolation & purification (IM) and the drug from which it is being isolated without a subheading (IM).

    Isolation of cholesterol
    from lanolin:

    CHOLESTEROL *isolation &
    & purification (IM)
    LANOLIN (IM)

15. When indexing simple compounds for which the indexer must use two or more MeSH headings to show a coordination, index each with the same subheading, but make the pharmacologically active heading IM and the inactive one, NIM. See the Indexing Manual 18.33.

16. When indexing a drug with the subheading *administration & dosage, always try to specify as an NIM coordinate a MeSH heading to cover the type

of administration or the type of dose.

Intramuscular injection
of penicillin:

PENICILLIN *administration
& dosage (IM)
INJECTIONS, INTRAMUSCULAR (NIM)

17. Assume that all administration of drugs is oral UNLESS OTHERWISE SPECIFIED.

18. For the injurious effects of drugs or chemicals, consider the three subheading qualifiers, *adverse effects, *poisoning and *toxicity, following closely the MeSH restrictions in the definitions (see page 21-22).

19. There is a main heading ENVIRONMENTAL EXPOSURE (G3) as a Provisional Heading for 1968 and 1969. Use this as defined by MeSH in cases where the above three subheadings do not apply within the restrictions of the MeSH definitions. See page 22.

20. When indexing a chemical to induce a physiological condition or a disease state deliberately under experimental conditions, index the name of the drug or chemical without a subheading. This has been introduced as policy since the deliberate induction of an injurious effect does not fit the definition of *adverse effects, *poisoning or *toxicity. See the Indexing Manual 18.18 and 18.18.1.

21. Index known anesthetics used to induce anesthesia under the name of the anesthetic without a subheading (Indexing Manual 18.27). Always try to specify the specific type of anesthesia.

Halothane anesthesia:

HALOTHANE (IM)
ANESTHESIA, INHALATION (IM)

GEOGRAPHIC HEADINGS

Tend to use the MeSH Geographic Headings to locate the legislative, economic, educational, social, professional and related concepts in the field of pharmacy and pharmacology.

It is important to MEDLARS users that articles on drug legislation in France, for example, be retrieved specifically in a computer search on LEGISLATION, DRUG associated with FRANCE. A user wanting this information may not want to receive information on drug legislation in our country. To index or search under only LEGISLATION, DRUG does a user a disservice.

Similarly, if the user wants information on legislation only in this country, he does not want French legislation. Indexing or searching on only LEGISLATION, DRUG will give the user the French as well as American legislation, and so waste his time.

Using the correct Geographic Heading in the indexing operation, will enable the search to retrieve or reject at will specific geographic areas.

The following headings in MeSH in the field of pharmacy will be those for which the geographic location should be specified in indexing. Although there may be other headings to be used with good sense by the indexers, the following garner much material to which the identity of the country is pertinent.

Pharmacy Headings to be Used with MeSH Geographic Headings

CATALOGS, DRUG
CHEMICAL INDUSTRY
COMMUNITY PHARMACY SERVICE
DICTIONARIES, CHEMICAL
DICTIONARIES, PHARMACEUTIC
DIRECTORIES
DISPENSATORIES
DRUG AND NARCOTIC CONTROL
DRUG INDUSTRY
DRUG UTILIZATION (Prov)
EDUCATION, PHARMACY
EDUCATION, PHARMACY, CONTINUING
EDUCATION, PHARMACY, GRADUATE
ETHICS, PHARMACY
FEES, PHARMACEUTICAL
FORMULARIES
FORMULARIES, DENTAL
FORMULARIES, HOMEOPATHIC
FORMULARIES, HOSPITAL
HOSPITAL PHARMACY SERVICE
INSURANCE, PHARMACEUTICAL SERVICES
LEGISLATION, DRUG
LEGISLATION, PHARMACY
LICENSURE, PHARMACY
PHARMACEUTICAL SERVICES
PHARMACIES
PHARMACISTS
PHARMACY
PHARMACY ADMINISTRATION
PHARMACY AND THERAPEUTICS COMMITTEE
PHARMACOPEIAS
PHARMACOPEIAS, HOMEOPATHIC
SCHOOLS, PHARMACY
SOCIETIES, PHARMACEUTICAL
STUDENTS, PHARMACY

PROVISIONAL HEADINGS

A Provisional Heading in MEDLARS is a main subject heading which enters the system each year after the annual publication of MEDICAL SUBJECT HEADINGS (MeSH) each January. It appears usually as a new term or a new concept needed immediately for indexing and for storage within the computer until the publication of the next annual MeSH.

From the time it enters the computer until the imminent publication of MeSH, a computer count is kept on a Provisional Heading. Upon analysis of its use in indexing, a decision is made to elevate it to the status of a main heading in the forthcoming MeSH or to retain it for further use and further analysis later.

Provisional Headings serve two extremely useful purposes: (1) they give exact access to a store of large volume terms less easily scanned without the specificity of a Provisional, and (2) they furnish a fine source of new main headings for each ensuing year.

Each year the indexers and searchers are supplied with about 500 Provisional Headings for that year. Of these, more than half are drug and chemical terms.

For this reason, many Provisional Headings are available for indexing the drug literature and should be freely used by MEDLARS personnel.

Except for their designation as Provisional (as such they do not appear in the printed INDEX MEDICUS) they are subject to all indexing rules and are to be treated as any other MeSH heading. Each is assigned to a proper category and each may be paired with the subheadings available to that category.

In the arrays given on pages 32-45, the Provisional Headings are indicated (Prov).

1. IN VITRO

The effect of a drug on the liver can be studied in two ways: (1) by administering the drug to man or animal, then taking a sample of liver tissue and examining it in vitro or (2) by taking a sample of human or animal tissue, administering the drug to it in vitro and then examining it.

Under MEDLARS, (1) is NOT checked IN VITRO but (2) is. To state it differently, in (1) the action of the drug took place in vivo while in (2) the action of the drug took place in vitro.

It is this difference that MEDLARS puts to work in separating for retrieval the routine obvious in vitro studies from deliberately performed and non-routine in vitro studies. Checking the tag IN VITRO tells the MEDLARS Search Analyst that the research was performed under the conditions illustrated in (2) above.

A detailed exposition of IN VITRO is given in the Indexing Manual 11.15-11.15.5.

Many articles in pharmacy and pharmaceutical journals will discuss chemical processes taking place in test tubes or verified in test tubes. Do NOT use IN VITRO for these.

Many articles from pharmacology journals will be on the effect of a drug or chemical on organs or organisms. Use IN VITRO only under the conditions of (2) above.

Do NOT check IN VITRO for articles on chemistry, chemical structure, chemical reactions, chemical synthesis, chemical analysis or quantitative or qualitative chemical determinations.

2. CLINICAL RESEARCH

Under MEDLARS the term "clinical research" has a restricted definition: the article must be on research done under highly controlled conditions with a distinct pre-arranged research design.

It does not refer to research done on humans as opposed to animals, nor does it refer to research on patients as opposed to healthy volunteers.

Most articles correctly checked CLINICAL RESEARCH will concern research on drugs performed under strict medical control to test the therapeutic value in a specific disease.

Double-blind studies or triple-blind studies should be examined closely, for they are usually correctly check-tagged as CLINICAL RESEARCH.

The use of PLACEBOS in a study should be examined closely, for articles involving these are usually correctly tagged CLINICAL RESEARCH.

More information on this tag is found in the Indexing Manual 11.18-11.18.5.

3. COMPARATIVE STUDY

A quotation from the Indexing Manual (11.19.1) best defines the use of this check tag: "This check tag must be used to make available for retrieval articles comparing two or more therapeutic or diagnostic procedures, or two or more determinative technics."

Do NOT tag COMPARATIVE STUDY for a comparison of the effects of a single drug on two or more organs or two or more organisms.

Check COMPARATIVE STUDY for the comparison of two or more drugs on a single organ or organism.

SUBHEADINGS

Category D

The subheadings in this section are those of particular interest to MEDLARS Analysts handling the literature of pharmacy, pharmacology and toxicology. They are presented in various arrangements.

Below is an alphabetical list of MEDLARS subheadings available for indexing and searching terms found in Category D - Chemicals and Drugs. For the definitions see either MEDICAL SUBJECTS HEADINGS, January 1969, pages VII-IX or the MEDLARS INDEXING MANUAL 1969, Sections 12.4.1 through 12.4.60. Applications of these subheadings will be found throughout the Indexing Manual.

*administration & dosage
*adverse effects
*analysis
*antagonists & inhibitors
*biosynthesis
*blood
*cerebrospinal fluid
*chem synthesis
*classification
*diagnostic use
*history
*isolation & purification
*metabolism
*pharmacodynamics
*physiology
*poisoning
*radiation effects
*secretion
*standards
*supply & distribution
*therapeutic use
*toxicity
*urine

Next follows an arrangement showing the subheadings in various relationships in discrete areas. It is to be used in this way: if the MEDLARS Analyst is considering a given subheading in the field of pharmacy or pharmacology or toxicology, he can locate it below in relation to others which suggest possibly greater specificity. The official subheadings are preceded as usual by an asterisk (*); words in parentheses are typed to facilitate a grouping.

Category D Subheading Relationships

*analysis
(in) *blood
(in) *cerebrospinal fluid
(in) *urine
*isolation & purification
*radiation effects
*standards

*pharmacodynamics
*administration & dosage
*antagonists & inhibitors
(injurious effects)
*adverse effects
*poisoning
*toxicity
*physiology
*metabolism
*biosynthesis
(in) *blood
(in) *cerebrospinal fluid
(in) *urine
*secretion

*therapeutic use
*administration & dosage
*standards

(other)
*chem synthesis
*classification
*diagnostic use
*history
*supply & distribution

Instructions on the use of the various subheadings pertinent to pharmacy and pharmacology follow. As said above, the definitions are not given here since they appear in both MeSH and the Indexing Manual. Nor are all of them covered here since each is better discussed in the manual. You will find here no deviations from policy but only cautions and reminders on the usual use of the common ones.

*administration & dosage

Interpret this as "administration OR dosage." Use it in reference to the form of the dose and the amount of the medication as well as in reference to the route, the frequency or the duration of the administration.

When using this subheading, tend to make NIM the specific type of administration in the form of the many available MeSH dosage and administration headings.

Assume that all administration is ORAL (for there is no MeSH term to cover this) unless otherwise specified.

*analysis

This is for articles discussing the identification or quantitative determination of a substance in an organ or organism.

If the author is discussing the qualitative or quantitative determination of a substance or its presence in the blood, urine or cerebrospinal fluid, index instead under each of these directly as *blood, *urine or *cerebrospinal fluid.

*analysis must refer to the determination of the drug or chemical in an organ or organism, or to its presence there. It does NOT mean the chemical structure of a drug, nor does it mean its chemistry. To index the chemistry of a drug, index under the name of the drug without a subheading (IM) and coordinate with CHEMISTRY (NIM).

*chem synthesis

Note that the subheading *chemical synthesis is modified in daily use to *chem synthesis. This is done to distinguish it from the subheading *chemically induced (used with names of diseases) internally within the computer which at present distinguishes among subheadings for purposes of alphabetization only within the first eight letters of any subheading.

```
 1 2 3 4 5 6 7 8
*c h e m i c a l | l y  i n d u c e d
*c h e m i c a l |   s  y n t h e s i s
```

would be indistinguishable.

*chem synthesis may be used for articles on the chemical synthesis of drugs or chemicals on any level, i.e., the synthesis may take place in a test tube or on a large industrial scale.

Take care to distinguish *chem synthesis from *biosynthesis in that in using *biosynthesis, be certain that living (bio-) matter is involved. For example, the synthesis of penillin by Penicillium is indexed PENICILLIN *biosynthesis; the synthesis of penicillin in Italian factories is indexed PENICILLIN *chem synthesis.

*diagnostic use

This is a little-used subheading although the concept "diagnostic use" may refer to the use of the drug or chemical either in the diagnosis of a disease or in performing studies of clinical function of an organ or system.

An article on bromsulphalein in liver function tests is indexed under SULFOBROMOPHTHALEIN *diagnostic use (IM) and LIVER FUNCTION TESTS (IM).

When using radioisotopes as tracers in metabolic studies, do not use the subheading *diagnostic use with the name of the isotope: index without a subheading and do not coordinate with RADIOMETRY. See the Indexing Manual 18.23.3.1 and 18.23.4.

*isolation & purification

Interpret this as "isolation OR purification." It may apply to one substance being separated from another, usually in vitro, or for the preparation of purified constituents of a substance.

*metabolism

This is for articles on the absorption, distribution, biotransformation and excretion of drugs and chemicals.

If the article discusses the metabolism and ultimate appearance of the drug or its metabolites in the blood, urine or cerebrospinal fluid, index this with a specific subheading *blood, *urine or *cerebrospinal fluid, and not with *metabolism. *blood, *urine and *cerebrospinal fluid are to be used to cover the metabolic processes into the blood or the metabolic processes taking place in the blood and not exclusively to cover the mere presence of a substance in the blood.

*pharmacodynamics

Loosely speaking, this can be used practically any time an author speaks of the "effects" of a drug in or on a living organism. In MEDLARS at this time it is not restricted to the mechanism of action of a drug: it may apply to any effect of a drug on the structure, physiological process, metabolic process, etc., of an organ or organism. Naturally it will be used for articles on mechanism of action.

Do not index under *pharmacodynamics, however, the in vitro effect or reaction of one drug with another. This is indexed under the name of each drug (IM) and the coordinate CHEMISTRY (NIM).

*physiology

The emphasis of the MeSH definition of *physiology as used with Category D terms is on "biochemical substances ENDOGENOUSLY produced, for the physiologic role of the substance."

This means that an article on the effect of insulin injections must be viewed as INSULIN *pharmacodynamics since the insulin is being administered from the outside. On the other hand, an article on the effect or role of insulin in the control of blood sugar is viewed as INSULIN *physiology because - one will find upon reading the article - the insulin is being discussed as endogenous and as exerting a physiological role within the body.

An indexer can never use this subheading in reference to any substance not found naturally in the body (by that we mean in the sense that a hormone or enzyme or blood protein is found naturally in the body).

*radiation effects

Drugs are studied by subjecting them to various types of radiation to learn the effect of the irradiation on the chemistry or pharmacodynamics of a specific drug. This may be done in vitro or in vivo.

The effect of radiations on a drug or a chemical is indexed, generally, under the name of the drug with the subheading *radiation effects (IM), RADIATION EFFECTS (IM) and the specific type of radiation (IM). See the Indexing Manual 18.32, 18.32.1 and 18.32.2.

If the article is on the chemical effects of irradiating the drug or on the chemistry of the drug after irradiation, index under the name of the drug with the subheading *radiation effects (IM), RADIATION EFFECTS (IM), the specific type of radiation (IM) and RADIOCHEMISTRY (NIM).

*secretion

Use this for the act or mechanism of secretion of a substance by an organ or organism. Here the emphasis of the secretion is on an ENDOGENOUS substance being secreted: the discharge of a drug administered from outside the body and then secreted during the metabolic processes within the body is NOT to be handled by *secretion, for it was not endogenously produced. Here *metabolism is the correct. Compare this with the cautions regarding *physiology above.

This subheading as well as *physiology and *metabolism will be used more in indexing the literature of metabolic and endocrine diseases than in indexing pharmacy and pharmacology literature. The MEDLARS Analyst, however, should be acquainted or reminded here of the restrictions in all areas.

*therapeutic use

This may be used to cover the actual treatment of a disease or its prevention. The treatment or prevention of diseases in both humans and animals applies.Too it may be used for the treatment of diseases induced in experimental animals as well as for animal diseases occurring naturally.

If the emphasis of the therapeutic use is on the administration of the drug, bypass this subheading and use *administration & dosage instead.

If the article is on both the therapeutic use but also on the administration, index under both but make the point of the article IM.

*classification
*history
*standards
*supply & distribution
*utilization

These are all useful breakdowns of articles on drugs but are not required as frequently in indexing as the others above. They should be used freely as required.

Except for *classification, the remaining four should always be used in relation to a Geographic Heading, if possible and if applicable, for better retrieval.

*standards may refer to standards in identifying drugs, standards in their quality, standards in their potency and standards in their manufacturing.

There are restrictions in the use of the three available subheadings for the injurious effects of drugs or chemicals built into the subheadings by the MeSH definitions. It is good to discuss them here from the standpoint of the cautionary instructions. The quotations are from the MeSH definitions.

*adverse effects

The restriction in regard to *adverse effects lies in the MeSH words "for unintended or undesirable reactions occurring at doses normally used..." This means that the article must be discussing the adverse effects of a drug or chemical given THERAPEUTICALLY at normal doses.

*poisoning

Here the author generally leaves no question of degree to the analyst: he generally used the word "poisoning" (in foreign literature, "intoxication") in discussing the injurious effects of the drug or chemical. MeSH gives latitude in applying the term "poisoning" as used by the author since it states that *poisoning may be used "for human or animal poisoning, acute or chronic, whether the poisoning is accidental, occupational, suicidal, homicidal, by self medication, by medication error, or by environmental exposure."

*toxicity

In this definition, an analyst will rely usually on the fact that most articles are on the experimental study of the toxic effects and that the emphasis of the study is usually on

"the margin of safety or the reactions accompanying administration at various dose levels."

When a drug or a chemical is administered deliberately to induce a disease state, index under the name of the drug or chemical WITHOUT a subheading (Indexing Manual 18.18 and 18.18.1).

This is indexed without a subheading since in such experiments the injurious effect of the given drug is usually known to the experimenter, and therefore this cannot fit properly into the MeSH definition of *toxicity where the study is on the not-as-yet-known toxic effects. Moreover, since the injurious effect of said drug was not the result of therapeutic use, it cannot meet the requirements of *adverse effects as defined.

The fact that a subheading is not used with the drug does not affect the use of *chemically induced with the name of the disease (Indexing Manual 16.32, 16.32.1 et passim).

ENVIRONMENTAL EXPOSURE (G3), a 1969 Provisional Heading, is available as an excellent coordinate with drug terms when an injurious effect is a result of environmental exposure to the substance. The surroundings need not be exclusively industrial. ENVIRONMENTAL EXPOSURE can cover the harmful effects which cannot correctly meet the MeSH definition of *adverse effects, *poisoning or *toxicity.

When *poisoning or *toxicity - by the MeSH definition - is used and when the injurious effect of the chemical is a result of environmental exposure, index under both the drug term with the proper injurious-effect subheading and coordinate for more specific delineation under ENVIRONMENTAL EXPOSURE (NIM).

REFERENCES AND TOOLS

As in all indexing, the best reference is the article itself and the word of the author. Obtain from the article the maximum amount of information to be described in terms of MEDICAL SUBJECT HEADINGS.

The following is a list of additional useful reference works for the indexing of pharmacy and pharmacology.

1. American Drug Index. Ed. by C.O. Wilson & T. E. Jones. Philadelphia, Lippincott, 1967

2. American Hospital Formulary Service. Washington, American Society of Hospital Pharmacists, 1959 (with supplements to date)

3. Condensed Chemical Dictionary. 7th ed. Ed. by A. & E. Rose. New York, Reinhold, 1966

4. Desktop Analysis Tool; a special compilation of information from the common data base. Publ. by Chemical Abstracts Service for the Food and Drug Administration, the National Library of Medicine and the National Science Foundation. 1967

5. Drill's Pharmacology in Medicine. 3d ed. Ed. by J. R. DiPalma. New York, Blakiston, 1965

6. Gehes Codex der pharmazeutischen Spezialpraparate. 9th ed. Stuttgart, Wissenschaftliche Verlagsgesellschaft, 1960 with supplement 1964

7. Goodman, L. S. & Gilman, A. The Pharmacological Basis of Therapeutics. 3d ed. New York, Macmillan, 1965

8. Grollman, A. Pharmacology and Therapeutics. 6th ed. Philadelphia, Lea & Febiger, 1965

9. Husa's Pharmaceutical Dispensing. 6th ed. Ed. by E.W. Martin. Easton, Pa., Mack, 1966

10. Jablonski, S. Russian Drug Index. Bethesda, National Library of Medicine, 1967

11. Jones, L. M. Veterinary Pharmacology and Therapeutics. 3d ed. Ames, Iowa State University Press, 1965

12. MEDLARS Indexing: Integrated Authority File, Chemical Section. Bethesda, National Library of Medicine, 1968.

13. Merck Index: an Encyclopedia of Chemicals and Drugs. 8th ed. Rahway, N.J., Merck, 1968

14. Modern Drug Encyclopedia and Therapeutic Index. 10th ed. & supplements. Ed. by R.S. Goodhart. New York,Donnelley, 1965. Suspended publ. 1967

15. National Formulary. 12th ed. with addenda. Washington, American Pharmaceutical Association, 1965

16. New Drugs evaluated by the A.M.A. Council on Drugs. Chicago, American Medical Association, 1966

17. Organisch-Chemische Arzneimittel und Ihre Synonyma. Berlin DDR, Akademie-Verlag, 1966

18. Pharmacological and Chemical Synonyms. 4th ed. Comp. by E.E.J. Marler. New York, Excerpta Medica, 1967

19. Pharmacopeia of the United States of America. 17th rev. & supplements. Easton, Pa., Mack, 1965

20. Physicians' Desk Reference to Pharmaceutical Specialties and Biologicals. 21st ed. Oradell, N.J., Medical Economics, 1966

21. Prescription Pharmacy. Ed. by J.B. Sprowls Jr. Philadelphia, Lippincott, 1963

22. Remington's Pharmaceutical Sciences. 13th ed. Easton, Pa., Mack, 1965

23. Sollmann, T. A Manual of Pharmacology. 8th ed. Philadelphia, Saunders, 1957

24. Trease, G.E. & Evans, W.C. A Textbook of Pharmacognosy. 9th ed. London, Bailliere, Tindall & Cassell, 1966

25. United States Adopted Names (USAN). No. 5 (1961-1966) New York, U.S. Pharmacopeial Convention, 1967

26. United States Dispensatory and Physicians' Pharmacology. 2d ed. Ed. by A. Osol, R. Pratt & M. Altschule. Philadelphia, Lippincott, 1967

27. Unlisted Drugs. Chatham, N.J., Special Libraries Association. Monthly publication.

28. Van Lenten, E.J. MEDLARS Classification of Steroids. Bethesda, National Library of Medicine, 1968

29. Wallis, T.E. Textbook of Pharmacognosy. 5th ed. London, Churchill, 1967

30. Youngken, H.W. Textbook of Pharmacognosy. 6th ed. Philadelphia, Blakiston, 1948.

APPENDIX I

Subcategory B6 (Mosses, Ferns and Higher Plants)

Many of the terms in the B6 subcategory of MeSH are of interest to pharmacists and to those indexing pharmacy literature, although most of the headings are of historical character rather than of pressing immediacy.

The arrays below are useful in showing the MeSH coverage of many plants appearing in the literature devoted to pharmacognosy and especially in the literature of foreign countries leaning heavily on the use of medicinal plants in their therapeutic or pharmacal armamentarium.

A few botanical terms which are useful in indexing pharmacy are found in Category J (Technology, Commerce and Industry). They are included below with the B6 terms but are marked (J).

Several groupings are given below. An additional one is given in the 1969 MEDICAL SUBJECT HEADINGS: TREE STRUCTURES where the arrangement of the specifics in Subcategory B6 divides them into HERBS or TREES. This grouping is not reproduced here.

A potpourri of notes on specific terms follows at the end.

Arrangement by plant structure:

- PLANTS
  - FRUIT (J)
  - NUTS (J)
  - POLLEN
  - SEEDS
  - WOOD (J)

Arrangement by plant taxonomy:

- PLANTS
  - GRASSES
  - HERBS
  - TREES

Arrangement by use:

- PLANTS
  - PLANTS, EDIBLE
    - CASSAVA
    - CEREALS (J)
      - CORN
      - GRAIN
      - MALT (J)
      - RICE
      - WHEAT
    - FRUIT (J)
      - CITRUS FRUITS (J)
      - GRAPES (J)
    - NUTS (J)
      - CACAO
      - COCONUT (J)
      - PEANUTS (J)
    - RHUBARB
    - VEGETABLES (J)
      - SOY BEANS (J)
  - PLANTS, MEDICINAL
    - HERBS
    - TREES

Plants of commercial importance:

ALFALFA
ARECA
CACAO
CANNABIS
CASSAVA
CINCHONA
COCA
COFFEE
COTTON
PAPAVER
RUBBER (J)
TEA
TOBACCO

CONDIMENTS (J) or spices:

CLOVE
GARLIC
MUSTARD
THYME

PLANTS, MEDICINAL

ACACIA
ADONIS
AESCULUS
ALOE
ASPIDIUM
BELLADONNA
CAJEPUT
CAPSICUM
CASTANEA
CHELIDONIUM
CHENOPODIUM
COLCHICUM
COLOCYNTH
CONVALLARIA
CRATAEGUS
CUBEB
DIGITALIS
ECHINACEA
ERYTHRINA
EUCALYPTUS
EUPATORIUM
EUPHRASIA
FERULA
FRANGULA
GELSEMIUM
GENTIAN
GERANIUM
GINSENG
GLYCYRRHIZA
HELIANTHUS
HYDRASTIS
IPECAC
JUNIPER
LITHOSPERMUM
LOBELIA
MANDRAGORA
MARRUBIUM
MYRICA
NUX VOMICA (D2)
OLEANDER
PODOPHYLLUM
POLYGONUM
PSYLLIUM
PYRETHRUM
RAUWOLFIA
RHUBARB
RHUS
RICINUS
ROSA
SALIX
SARSAPARILLA
SEDUM
SENECIO
SENNA
SPHAGNUM
SQUILL
STRAMONIUM
TAMARIND
UVA URSI
VALERIAN
VERATRUM
VISCUM

AESCULUS	This is the horse chestnut.
ARECA	This is betel nut.
ASPIDIUM	This is the plant called male fern.
CACAO	Index chocolate here. CACAO will be used for the cacao plant or products from it, such as cocoa and chocolate. If chocolate candy, index under both CACAO and CANDY.
CANNABIS	This is hemp. Index under CANNABIS for both the plant and the hashish from it.
CAPSICUM	This is pepper.
CASTANEA	This is chestnut.
CEREALS	Index under CEREALS the plant itself or the seeds of the plant used as food, whether in the natural state or commercially processed. MeSH, however, gives several specific cereal terms.
CINCHONA	This is the source of quinine.
COFFEE	Index both the beverage and the coffee plant here.
CONVALLARIA	This is the lily-of-the-valley.
CORN	Index both the plant and the food here.
COTTON	Index both the plant and the textile here.
CRATAEGUS	This is the hawthorn.

DIGITALIS	Index only the plant here: the alkaloids from the plant are indexed under DIGITALIS GLYCOSIDES.
FERULA	This is asafetida ("fetid gum").
FRUIT	Botanically the fruit of a plant is a matured ovary while the seed is a matured ovule.
GARLIC	Index both the plant and the condiment here.
GELSEMIUM	This is jasmine.
GLYCYRRHIZA	Index both the plant and licorice as candy, flavoring or medicament here.
GRAIN	This is defined by Webster as "the seed or fruit resembling seed of any cereal grass (as wheat, oats, rice, millet)."
HELIANTHUS	This is the sunflower.
HERBS	This is defined by Webster as "a seed-producing plant that does not develop persistent woody tissue but dies down at the end of a growing season."
IPECAC	Index both the plant and the drug here.
MARRUBIUM	This is horehound.
MUSTARD	Index both the plant and the condiment here.
MYRICA	This is bayberry. Do not confuse with Myristica which gives us nutmeg and mace.
PAPAVER	Index only the plant here; index opium under OPIUM.

PODOPHYLLUM	This is mandrake.
RAUWOLFIA	Index both the plant and its alkaloids here but see MeSH for headings for specific alkaloids.
RHUBARB	Index both the plant and the prepared dish here.
RHUS	This is for various species of both ivy and sumac.
RICE	Index both the plant and rice as food here.
RICINUS	Index only the castor plant here. Castor oil is indexed as CASTOR OIL.
RUBBER	Index both the plant and the elastic substances here.
SALIX	This is the willow.
TEA	Index both the plant and the beverage here.
VERATRUM	This is hellebore.
VISCUM	This is mistletoe.

APPENDIX II

MEDICAL SUBJECT HEADINGS

1969

The pages that follow give the 1969 MeSH coverage in the fields of pharmacy, pharmacology and toxicology. The headings are grouped into more or less natural subject blocks under these rubrics:

1. Pharmaceutical Sciences
2. Pharmacy Education
3. Pharmacy Practice
4. Pharmaceutical Services
5. Drug Information Sources
6. Pharmaceutical Technology
7. Analytical Chemistry
8. Physical Chemistry
9. Chemistry and Chemical Reactions
10. Miscellaneous Substances of Interest to Pharmacy
11. Pharmacology and Pharmacodynamics
12. Drug Interactions
13. Drug Therapy
14. Toxicology

1. Pharmaceutical Sciences

PHARMACOLOGY
- DRUG THERAPY
  - HERBALISM
  - HOMEOPATHY
- PHARMACOGNOSY
  - HERBALISM
- PHARMACY
  - CHEMISTRY, PHARMACEUTICAL
  - TECHNOLOGY, PHARMACEUTICAL
- TOXICOLOGY

2. Pharmacy Education

All terms below are found in Category I.

EDUCATION, PHARMACY
- EDUCATION, PHARMACY, CONTINUING
- EDUCATION, PHARMACY, GRADUATE

SCHOOLS, PHARMACY
- FACULTY, PHARMACY
- STUDENTS, PHARMACY

3. Pharmacy Practice

Except for PHARMACY (E5,G2), all terms below are found in Category N.

PHARMACY
PHARMACISTS
PHARMACIES

DRUG UTILIZATION (Prov)
ETHICS, PHARMACY
FEES, PHARMACEUTICAL
INSURANCE, PHARMACEUTICAL SERVICES
LEGISLATION, DRUG
- LEGISLATION, PHARMACY
- DRUG AND NARCOTIC CONTROL

LICENSURE, PHARMACY
PHARMACY ADMINISTRATION
PHARMACY AND THERAPEUTICS COMMITTEE
SOCIETIES, PHARMACEUTICAL
UNITED STATES FOOD AND DRUG ADMINISTRATION

4. Pharmaceutical Services

All terms below are in Category N.

PHARMACEUTICAL SERVICES
- COMMUNITY PHARMACY SERVICE
- HOSPITAL PHARMACY SERVICE
- INSURANCE, PHARMACEUTICAL SERVICES

5. Drug Information Sources

All terms below are in Category L.

- CATALOGS, DRUG
- DICTIONARIES, CHEMICAL
- DICTIONARIES, PHARMACEUTIC
- DIRECTORIES
- DISPENSATORIES
- FORMULARIES
  - FORMULARIES, DENTAL
  - FORMULARIES, HOMEOPATHIC
  - FORMULARIES, HOSPITAL
- PHARMACOPOEIAS
  - PHARMACOPOEIAS, HOMEOPATHIC

6. Pharmaceutical Technology

The terms below come from Categories D, E and J, with the exception of DRUG ADULTERATION (G3). To improve legibility, the category numbers are not given with this large grouping. Use the alphabetical MeSH to obtain the category number for coordination with correct subheadings.

CHEMICAL INDUSTRY
- DRUG INDUSTRY
  - TECHNOLOGY, PHARMACEUTICAL
    - DOSAGE FORMS (and types of administration)
      - AEROSOLS
      - CAPSULES
      - DELAYED-ACTION PREPARATIONS
        - TABLETS, ENTERIC-COATED
      - EMULSIONS
      - ENEMA
      - GELS
      - INFUSIONS, PARENTERAL
      - INHALATION THERAPY
      - INJECTIONS
        - INJECTIONS, INTRA-ARTERIAL
        - INJECTIONS, INTRA-ARTICULAR
        - INJECTIONS, INTRADERMAL
        - INJECTIONS, INTRALYMPHATIC (Prov)
        - INJECTIONS, INTRAMUSCULAR
        - INJECTIONS, INTRAPERITONEAL
        - INJECTIONS, INTRATHECAL
        - INJECTIONS, INTRAVENOUS
        - INJECTIONS, SUBCUTANEOUS
      - IONTOPHORESIS
      - LINIMENTS
      - OINTMENTS
      - PERFUSION
        - ISOLATION PERFUSION
      - POWDERS
      - SOLUTIONS
        - HYPERTONIC SOLUTIONS
        - HYPOTONIC SOLUTIONS
        - ISOTONIC SOLUTIONS
        - OPHTHALMIC SOLUTIONS

SUPPOSITORIES
SUSPENSIONS
TABLETS
TABLETS, ENTERIC-COATED
DRUG ADULTERATION
DRUG COMPOUNDING
PHARMACEUTIC AIDS
FLAVORING AGENTS
SWEETENING AGENTS
VANILLIN
POWDERS
KAOLIN
STARCH
TALC
VEHICLES
COLLODION
LANOLIN
MINERAL OIL
DRUG LABELING
DRUG STABILITY
DRUG STORAGE
EQUIPMENT AND SUPPLIES
DISPOSABLE EQUIPMENT
DRUG CONTAINERS AND CLOSURES
FILTERS
(Materials)
CELLOPHANE
CERAMICS (Prov)
GLASS
PAPER
RUBBER
SYRINGES
THERMOMETERS
WEIGHTS AND MEASURES

7. Analytical Chemistry

The terms below come predominantly from Category H (Physical Sciences). Those coming from Subcategory E5 are so marked and one, INDICATORS AND REAGENTS, comes from Subcategory D13.

CHEMISTRY, ANALYTICAL
- ACTIVATION ANALYSIS
- AUTOANALYSIS (E)
- BIOLOGICAL ASSAY (E)
- CALORIMETRY
- CENTRIFUGATION (E)
  - ULTRACENTRIFUGATION
    - CENTRIFUGATION, DENSITY GRADIENT
    - CENTRIFUGATION, ZONAL
- CHROMATOGRAPHY
  - CHROMATOGRAPHY, GAS
  - CHROMATOGRAPHY, ION EXCHANGE
  - CHROMATOGRAPHY, PAPER
  - CHROMATOGRAPHY, THIN LAYER
  - GEL FILTRATION
- COLORIMETRY
- CONDUCTOMETRY
- COUNTERCURRENT DISTRIBUTION
- CRYSTALLOGRAPHY
  - X-RAY DIFFRACTION
- DIALYSIS
- ELECTROPHORESIS
  - ELECTROPHORESIS, DISK (Prov)
- INDICATORS AND REAGENTS (D)
  - DYES
    - ACRIDINES
    - AZO COMPOUNDS
      - CONGO RED
      - DIMETHYLAMINOAZOBENZENE
      - TRYPAN BLUE
    - FLUORESCENT DYES
      - FLUORESCEIN
    - INDOCYANINE GREEN
    - PHENOLPHTHALEINS
      - SULFOBROMOPHTHALEIN

ROSANILINE DYES
GENTIAN VIOLET
METHYLENE BLUE
ROSE BENGAL
TETRAZOLIUM SALTS
GUAIAC
PHLOROGLYCINOL
MANOMETRY (E)
MICROCHEMISTRY
MICROSCOPY (E)
MICROSCOPY, ELECTRON
MICROSCOPY, FLUORESCENCE
MICROSCOPY, INTERFERENCE
MICROSCOPY, PHASE CONTRAST
PHOTOMICROGRAPHY
MICROSCOPY, POLARIZATION
MICROSCOPY, X-RAY

MICROMANIPULATION
MICRORADIOGRAPHY
PHOTOMICROGRAPHY
OSCILLOMETRY (E)
PHOTOMETRY (E)
DENSITOMETRY (E)
DENSITOMETRY, X-RAY (E)
FLUOROMETRY (E)
POLAROGRAPHY
POTENTIOMETRY
RADIOMETRY
+ SPECTRUM ANALYSIS
ELECTRON PROBE MICROANALYSIS (Prov)
ELECTRON SPIN RESONANCE
GAMMA SPECTROMETRY (E) (Prov)
NUCLEAR MAGNETIC RESONANCE
OPTICAL ROTATORY DISPERSION (Prov)
SPECTROPHOTOMETRY
GAMMA SPECTROMETRY (E) (Prov)

+ When indexing, specify INFRARED RAYS or ULTRAVIOLET RAYS as the NIM coordinate if stated by the author.

8. Physical Chemistry

All the terms below are from Category H unless otherwise specified. The 1969 MeSH gives METHODS and TIME FACTORS as Provisional Headings which are useful as parameters with many of the items below when pertinent.

CHEMISTRY, PHYSICAL
- ABSORPTION
- ADSORPTION
- CALORIMETRY
- CATALYSIS
- COLLOIDS
- CRYSTALLIZATION
- DIALYSIS
- DIFFUSION (G1,H) (Prov)
- ELECTROCHEMISTRY
  - CONDUCTOMETRY
  - ELECTRIC CONDUCTIVITY (G1,H)
  - ELECTROGALVANISM (E6,H)
  - ELECTROLYSIS
  - ELECTROPHORESIS
    - ELECTROPHORESIS, DISK (Prov)
  - POLAROGRAPHY
  - POTENTIOMETRY (E5)
- ENERGY TRANSFER (G1,H)
- HARDNESS
  - HARDNESS TESTS (E5) (Prov)
- HYDROGEN-ION CONCENTRATION
  - ACID-BASE EQUILIBRIUM (G1,H)
  - BUFFERS (G1,H)
- ION EXCHANGE
- KINETICS
- LUMINESCENCE
  - FLUORESCENCE
- MEMBRANES, ARTIFICIAL
- MOLECULAR WEIGHT
- OXIDATION-REDUCTION

PERMEABILITY
   OSMOSIS
      OSMOLAR CONCENTRATION (Prov)
      OSMOTIC PRESSURE (Prov)
PRECIPITATION
PRESSURE
   PARTIAL PRESSURE
RADIOCHEMISTRY
RHEOLOGY
SOLUBILITY
SPECIFIC GRAVITY
SURFACE PROPERTIES (Prov)
   SURFACE TENSION
      CAPILLARITY
TEMPERATURE (G3,H)
   COLD
      FREEZING
         FREEZE DRYING
         FREEZE ETCHING (E5) (Prov)
      REFRIGERATION (E5,J)
   HEAT
      THERMODYNAMICS
VISCOSITY
X-RAY DIFFRACTION

.9. Chemistry and Chemical Reactions

ALKYLATION (H)
   METHYLATION (H)
BIODEGRADATION (G1,H) (Prov)
BIOTRANSFORMATION (G1) (Prov)
ESTERS (D2)
FERMENTATION (G1)
FREE RADICALS (D1,D2) (Prov)
HYDROGEN-ION CONCENTRATION (H)
   ACID-BASE EQUILIBRIUM (G1,H)
   BUFFERS (G1,H)
MACROMOLECULAR SYSTEM (D10,D11)
MODELS, CHEMICAL (H)
MOLECULAR WEIGHT (H)
STEREOISOMERS (H) (Prov)

10. Miscellaneous Substances of Interest to Pharmacy

Although most of the substances below appear in Subcategory D13, several appear in other places as well within Category D. If the substances is in Category D, no specific location has been given since the categorization does not affect the available subheading. Since Category D and Category J differ in the subheadings available, those substances taken from Category J are indicated (J).

APHRODISIACS
CAUSTICS
CHARCOAL
DERMATOLOGIC AGENTS
- ANTI-INFLAMMATORY AGENTS, TOPICAL
- ASTRINGENTS
- COAL TAR
- ICHTHAMMOL
- LANOLIN
- METHOXSALEN
- PETROLATUM
- PODOPHYLLUM
- SUNSCREENING AGENTS (Prov)

EXPECTORANTS
- ACETYLCYSTEINE
- GUAIACOL GLYCERYL ETHER
- IPECAC

IRRITANTS
- CANTHARIDES
- LINIMENTS
- SCLEROSING SOLUTIONS

OILS
- CASTOR OIL
- CHAULMOOGRA OIL
- COTTONSEED
- CROTON OIL
- FISH LIVER OILS
- GOSSYPOL
- LINSEED
- MINERAL OIL
- OILS, VOLATILE
- SESAME OIL

PETROLEUM
   KEROSENE (Prov)
   MINERAL OIL
   PARAFFIN
   PETROLATUM
POLYMERS
   FLUOROCARBON POLYMERS
   LATEX PARTICLES
   PLASTICS
      NYLON (J)
   POLYETHYLENES
   POLYSTYRENES
   POLYURETHANES
   POLYVINYLS
   RESINS
      ACRYLIC RESINS
      BALSAMS
      BENZOIN
      EPOXY RESINS
      ION EXCHANGE RESINS
         CHOLESTYRAMINE
   SILICONES
SOLVENTS
(Sundries)
   COSMETICS (D13,J)
   DENTIFRICES (D13)
   DEODORANTS
   MOUTHWASHES
   PERFUME
   SOAPS
   SUNSCREENING AGENTS (Prov)
SURFACE-ACTIVE AGENTS
   DETERGENTS
   SOAPS
TARS
   COAL TAR
   ICHTHAMMOL
VEHICLES
   COLLODION
   LANOLIN
   MINERAL OIL
WATER
   ICE (G3)
   STEAM (G3)
WAXES
   PARAFFIN

11. Pharmacology and Pharmacodynamics

All of the terms in this group are in Subcategory G1.

PHARMACOLOGY
- BIODEGRADATION (Prov)
- BIOTRANSFORMATION (Prov)
- DEPRESSION, CHEMICAL
- DRUG TOLERANCE
  - INSULIN RESISTANCE
  - TACHYPHYLAXIS
- PSYCHOPHARMACOLOGY
- RECEPTORS, DRUG
- STIMULATION, CHEMICAL

12. Drug Interaction

DRUG ANTAGONISM
DRUG INCOMPATIBILITY (Prov)
DRUG SYNERGISM

13. Drug Therapy

DRUG THERAPY
- MEDICATION ERRORS
- NOSTRUMS
- PLACEBOS
- PRESCRIPTIONS
- SELF MEDICATION

14. Toxicology

The National Library of Medicine publishes a quarterly entitled the TOXICITY BIBLIOGRAPHY. It covers the "adverse and toxic effects of drugs and chemicals reported in approximately 2,300 biomedical journals..." The references are "selected from the monthly issues of INDEX MEDICUS for the corresponding period." (TOXICITY BIBLIOGRAPHY: Introduction, page ix, January-March 1969)

It contains references under "any subject heading for a chemical, drug or similar substance to which one of the following three subheadings has been applied": *adverse effects, *poisoning and *toxicity. For this reason, these three subheadings have been discussed separately in this brochure, pages 21-22.

The TOXICITY BIBLIOGRAPHY contains citations appearing under several disease headings. These diseases are indicated in the array below by their Category C (Diseases) number.

TOXICOLOGY (G1)
- POISONS (D13)
  - CHEMICAL WARFARE AGENTS (D13)
  - PESTICIDES (D3,D13)
    - HERBICIDES (D3)
    - INSECT REPELLENTS (D3)
    - INSECTICIDES (D3)
      - BENZENE HEXACHLORIDE (D3)
      - CHLORDAN (D3)
      - DDT (D3)
      - DIELDRIN (D3)
      - PARATHION (D3)
      - PYRETHRUM (D3)
      - ROTENONE (D3)
    - MOLLUSCACIDES (D3)
    - RODENTICIDES (D3)

(Diseases)
- ABNORMALITIES, DRUG-INDUCED (C14)
- ALCOHOLIC INTOXICATION (C14)
- DERMATITIS MEDICAMENTOSA (C14)
- DRUG ABUSE (F1,F2,I)
  - DRUG ADDICTION (F2)
    - DRUG WITHDRAWAL SYMPTOMS (F2)
    - GLUE SNIFFING (F1,F2,I)
    - MORPHINE ADDICTION (F2)
- DRUG HYPERSENSITIVITY (C14)
- ENVIRONMENTAL EXPOSURE (G3) (Prov)
- HEPATITIS, TOXIC
- INERT GAS NARCOSIS (C10,C14) (Prov)
- PHOTOSENSITIZATION
- POISONING (C14)
  - CARBON TETRACHLORIDE POISONING (C14)
  - FLUORIDE POISONING (C14)
  - GAS POISONING (C14)
    - CARBON MONOXIDE POISONING (C14)
  - (Metals)
    - ARGYRIA (C14)
    - LEAD POISONING (C14)
    - MERCURY POISONING (C14)
  - PLANT POISONING (C14)
    - ERGOTISM (C14)
    - LATHYRISM (C14)

(Therapy)
- ANTIDOTES (D13)
  - EMETICS (D6)
- CHELATING AGENTS (D13)
  - DEFEROXAMINE (D13)
  - DIMERCAPROL (D13)
  - DTPA (D13)
  - EDTA (D13)
  - PENICILLAMINE (D10,D13)

APPENDIX III

Category D - Chemicals and Drugs

The fields of pharmacy and pharmacology are represented in MEDICAL SUBJECT HEADINGS to some degree in every category from B through N. Only Category A (living organisms) yields no direct headings for pharmacy. And yet any MEDLARS Analyst knows that, certainly, the fields of pharmacology and, even more, pharmacodynamics are seldom indexed or searched without recourse to an organ or organism in the light of its response to various drugs and chemicals.

Of all the categories in which the Analyst will find headings of pharmaceutical or pharmacological interest, Category D yields the greatest bounty: it contains over 2600 terms out of the approximately 7400 terms in the whole of MeSH. Obviously this appendix cannot supplant or reproduce Category D in MeSH, nor should it. Both the categorizations and the alphabetical listing are indispensable to the MEDLARS Analyst and must be used constantly.

The following page gives a list of the titles or coverage of the 13 subcategories into which Category D is divided. It is supplied here in this brochure for ready reference and for a concise overall view of the MeSH coverage of large chemical and drug groups.

Category D

D1	Inorganic chemicals: elements, simple compounds and related terms
D2	Organic chemicals and structural groups
D3	Anti-infective agents and pesticides
D4	Antineoplastic agents and immunosuppressive agents
D5	Autonomic drugs, cardiovascular agents and muscle relaxants
D6	Central nervous system drugs, antiemetics, antihistaminics and antitussive agents
D7	Hematologic agents, gastrointestinal agents and agents for fluid therapy
D8	Hormones, precursors, metabolites, substitutes and antagonists
D9	Enzymes, coenzymes, enzyme inhibitors and precursors
D10	Amino acids, peptides, proteins and nucleic acids
D11	Carbohydrates, lipids, vitamins and related compounds
D12	Immunologic factors, biological factors and substances
D13	Miscellaneous chemicals and drugs

APPENDIX IV

NIM Headings

In indexing under MEDLARS, the indexer evaluates the MeSH headings assigned to an article as to whether the heading is to be printed in INDEX MEDICUS or is to be stored in the computer for possible retrieval by a searcher to meet a specific research need.

Those terms destined for publication in INDEX MEDICUS are termed IM or INDEX MEDICUS terms and those to be stored in the computer are called NIM or non-INDEX MEDICUS terms. In general, those appearing in INDEX MEDICUS (IM) represent the salient points of an article indexed and those stored in the computer (NIM) are valuable data but not necessarily the basic point of the articles.

This policy is referred to many times throughout this brochure and is repeated endlessly in the MEDLARS Indexing Manual. The basic philosophy of IM versus NIM appears in the manual in sections 4.1 through 4.2.2.7 and again with more specific examples in 13.11 through 13.11.5.

Here is a pertinent illustration in pharmacy. An article on the value of chemistry to a pharmacist is indexed as CHEMISTRY (IM) since here chemistry is a scientific discipline. But in an article on the chemistry of penicillin, we say that basically the subject is penicillin - but discussed from the chemical aspect. This is indexed now as CHEMISTRY (NIM) with the PENICILLIN as IM.

Below we list a set of main headings which may be indexed as IM if the articles discuss them as specialties or disciplines or fields of study. But if the articles discuss them as qualifiers of specific drugs or chemicals, they should be indexed as NIM.

The sections in the Indexing Manual where these headings are discussed are given in parentheses after the term.

BIOCHEMISTRY (14.15)
CHEMISTRY (14.15, 18.12, 18.12.1, 18.17, 18.31.1, 25.2, 25.2.1, 25.2.2, 25.3)
CHEMISTRY, AGRICULTURAL (25.2)
CHEMISTRY, ANALYTICAL (18.12, 25.2, 25.3)
CHEMISTRY, CLINICAL
CHEMISTRY, ORGANIC (25.2, 25.2.1, 25.2.2, 25.3)
CHEMISTRY, PHARMACEUTICAL (25.2, 25.2.1, 25.2.2)
CHEMISTRY, PHYSICAL (25.2, 25.2.1, 25.2.2)
ELECTROCHEMISTRY (and all indentions on page 39)
MICROCHEMISTRY
RADIOCHEMISTRY (18.32.3)

Pages 35-40 of this brochure list over a hundred MeSH terms which the indexers encounter constantly in the literature of pharmacy and pharmacology. They are predominantly chemical reactions and analytical and physicochemical technics.

In accordance with both indexing policy in general and notations on page 5 here, all of these technics are important for search retrieval for scientists using MEDLARS. They should be indexed routinely. However, in accordance with the IM/NIM policy, they should also routinely (in general) be indexed as NIM. The exception is given in item 9 on page 5.

APPENDIX V

Indexing Instructions for Miscellaneous Terms in Pharmacy and Pharmacology

The MEDICAL SUBJECT HEADINGS (MeSH) terms in the fields of pharmacy, pharmacology and toxicology will be found in Appendix II, arranged in natural groups for easy memorizing or easy reference.

In this appendix are terms encountered in indexing the literature of these fields for which there are no main headings in MeSH. In many instances many concepts are candidates as future MeSH headings, but in other cases, many need not be so considered and, instead, require only a little direction in the form of indexing instruction.

Indexing instructions are given for all of these terms in the usual form of Integrated Authority File (IAF) entries. Each of the entries in this appendix will find its way also into the official IAF.

This appendix contains instructions for two types of terms: for terms met in the literature and for terms appearing in the 1969 MeSH as <u>see</u> or <u>see under</u> cross-references.

The printed MeSH cross-references are indicated in the following pages by a + in front of the entry.

absorption
Index with proper sub-heading (IM)
ABSORPTION (NIM)

+ addiction
Index DRUG ADDICTION

+ adhesive plaster
Index BANDAGES

alkalinity
Index HYDROGEN-ION CONCENTRATION

+ allergy
Index HYPERSENSITIVITY or specific indention

+ amino acid analyzer
Index AUTOANALYSIS

ampules
Index DRUG CONTAINERS AND CLOSURES

+ anion exchange resins
Index ION EXCHANGE RESINS

+ antipruritics
Index DERMATOLOGIC AGENTS (IM)
PRURITUS *drug therapy (IM)

+ apparatus and instruments
Index EQUIPMENT AND SUPPLIES

+ arbutin
Index UVA URSI

+ barley
Index GRAIN

+ belladonna alkaloids
Index BELLADONNA

+ betel
Index ARECA

bioassay
Index BIOLOGICAL ASSAY

+ biopolymers
Index MACROMOLECULAR SYSTEMS

blood levels
Index with *blood

boiling point
Index CHEMISTRY, PHYSICAL (NIM)
HEAT (NIM)

+ botany, medical
Index PLANTS, MEDICINAL or
BOTANY if applicable

brand names
Index DRUGS or specific drug (IM)
NOMENCLATURE (IM)

+ butter yellow
Index DIMETHYLAMINOAZOBENZENE

carminatives
Index CATHARTICS

+ cation exchange resins
Index ION EXCHANGE RESINS

+ centrifugation, isopycnic
Index CENTRIFUGATION, DENSITY GRADIENT

chemical depression
Index DEPRESSION, CHEMICAL (NIM)

chemical stimulation
Index STIMULATION, CHEMICAL (NIM)

chemical structure
Index CHEMISTRY (NIM)

+ chocolate
Index CACAO

coatings
Index TABLETS or specific indention

+ cocoa
Index CACAO

+ cod liver oil
Index FISH LIVER OILS

coloring agents
Index PHARMACEUTIC AIDS (IM) COLOR (NIM)

column chromatography
Index CHROMATOGRAPHY

+ community pharmacies
Index PHARMACIES

+ complexons
Index CHELATING AGENTS

concentration
Index with *administration & dosage or *analysis or *blood, etc.

cough remedies
Index ANTITUSSIVE AGENTS or EXPECTORANTS if applicable

+ counterirritants
Index IRRITANTS

creams
Index OINTMENTS

cryptenamine
Index VERATRUM

+ crystal violet
Index GENTIAN VIOLET

+ DAB
Index DIMETHYLAMINOAZOBENZENE

+ dacron
Index POLYMERS

+ Datura
Index STRAMONIUM

decoctions
Index CHEMISTRY, PHARMACEUTICAL

decomposition
Index with *metabolism or CHEMISTRY (NIM)

+ defoliants, chemical
Index HERBICIDES

depot preparations
Index DELAYED-ACTION PREPARATIONS or TABLETS, ENTERIC-COATED

+ desferrioxamine
Index DEFEROXAMINE

desiccation
Index CHEMISTRY, PHARMACEUTICAL

determination
Index *analysis

distillation
Index CHEMISTRY, PHARMACEUTICAL

distribution
Index *metabolism

+ dithizone
Index INDICATORS AND REAGENTS

dosage (in English)
Index *administration * dosage

dosage (in foreign languages)
Index *analysis

dose
Index *administration & dosage (IM)
specific dosage form or type of administration (NIM)

dose/effect relationship
Index *administration & dosage

double-blind
Index with Check tag CLINICAL RESEARCH

+ dressings
Index BANDAGES

+ drug benefit plans
Index INSURANCE, PHARMACEUTICAL SERVICES

+ drug catalogs
Index CATALOGS, DRUG

+ drug committee
Index PHARMACY AND THERAPEUTICS COMMITTEE

+ drug degradation
Index DRUG STABILITY

+ drug dependence
Index DRUG ADDICTION

+ drug distribution systems, hospital
Index HOSPITAL MEDICATION SYSTEMS

+ drug insurance
Index INSURANCE, PHARMACEUTICAL SERVICES

drug interaction
Index CHEMISTRY (NIM) or DRUG SYNERGISM or DRUG ANTAGONISM

+ drug packaging
Index DRUG CONTAINERS AND CLOSURES

+ drug potentiation
Index DRUG SYNERGISM

+ electron microscopy
Index MICROSCOPY, ELECTRON

elimination
Index *urine usually or other route of elimination

elixirs
Index CHEMISTRY, PHARMACEUTICAL or SOLUTIONS or ALCOHOL, ETHYL if applicable

+ emollients
Index DERMATOLOGIC AGENTS

essential oils
Index OILS, VOLATILE

evaporation
Index CHEMISTRY or CHEMISTRY, PHARMACEUTICAL

+ excipients
Index PHARMACEUTIC AIDS

excretion
Index *urine usually or other route of excretion

extracts
Index specific drug (IM) CHEMISTRY, PHARMACEUTICAL (NIM) or PLANT EXTRACTS (Prov) if applicable

+ eyedrops
Index OPHTHALMIC SOLUTIONS

fate of drugs
Index *metabolism

+ FEP
Index FLUOROCARBON POLYMERS

filtration
Index CHEMISTRY or CHEMISTRY, PHARMACEUTICAL

flavors
Index FLAVORING AGENTS

fluidextracts
Index CHEMISTRY, PHARMACEUTICAL

+ fluon
Index FLUOROCARBON POLYMERS

+ fluorescence microscopy
Index MICROSCOPY, FLUORESCENCE

+ Food and Drug Administration
Index UNITED STATES FOOD AND DRUG ADMINISTRATION

+ food and drug laws
Index LEGISLATION, DRUG

+ Food, Drug and Cosmetic Act
Index LEGISLATION, DRUG

+ food plants
Index PLANTS, EDIBLE or specific plant

+ Formulary Committee
Index PHARMACY AND THERAPEUTICS COMMITTEE

+ fractional crystallization
Index CRYSTALLIZATION

+ fractional precipitation
Index PRECIPITATION

+ fractionation
Index CHEMISTRY, ANALYTICAL

+ fuel oils
Index PETROLEUM

+ fungal toxins
Index MYCOTOXINS

galenicals
Index DRUGS

+ gasoline
Index PETROLEUM

generic names
Index DRUGS or specific drug (IM) NOMENCLATURE

+ gum-resins
Index RESINS

gums
Index RESINS

+ hashish
Index CANNABIS

+ heavy metal detoxicants
Index CHELATING AGENTS

+ horehound
Index MARRUBIUM

+ hyoscyamine
Index BELLADONNA

hypodermic administration
Index INJECTIONS, SUBCUTANEOUS

+ ichthyol
Index ICHTHAMMOL

idiosyncrasy
Index DRUG HYPERSENSITIVITY

infusions (as administration)
Index *administration & dosage and specific technic

infusions (as extractions)
Index CHEMISTRY, PHARMACEUTICAL

+ injections, sclerosing
Index SCLEROSING SOLUTIONS

intracutaneous injections
Index INJECTIONS, INTRADERMAL

intradermal injections
Index INJECTIONS, INTRADERMAL

intraspinal injections
Index INJECTIONS, INTRATHECAL

ionization
Index CHEMISTRY, PHYSICAL

isopycnic centrifugation
Index CENTRIFUGATION, DENSITY GRADIENT

keratolytic agents
Index DERMATOLOGIC AGENTS

+ lacquer
Index PAINT

+ latex microspheres
Index LATEX PARTICLES

+ latex rubber
Index RUBBER

laxatives
Index CATHARTICS

LD
Index *toxicity

liquid petrolatum
Index MINERAL OIL

+ lithium aluminum hydride
Index INDICATORS AND REAGENTS

local administration
Index *administration & dosage

lotion
Index SOLUTIONS or DERMATOLOGIC AGENTS if applicable

+ lucerne
Index ALFALFA

+ lye
Index CAUSTICS

+ lyophilization
Index FREEZE DRYING

+ magnetic resonance
Index ELECTRON SPIN RESONANCE or NUCLEAR MAGNETIC RESONANCE

+ male fern
Index ASPIDIUM

+ manioc
Index CASSAVA

+ marihuana
Index CANNABIS

mass spectrometry
Index SPECTRUM ANALYSIS

measures
Index WEIGHTS AND MEASURES

mechanism of action
Index *pharmacodynamics

medical botany
Index PLANTS, MEDICINAL or BOTANY if applicable

+ metamucil
Index PSYLLIUM

+ methyl violet
Index GENTIAN VIOLET

+ methylrosaniline chloride
Index GENTIAN VIOLET

metric system
Index WEIGHTS AND MEASURES

+ microphotography
Index MICROFILMING or PHOTOMICROGRAPHY

milks (as milk of magnesia)
Index CHEMISTRY, PHARMACEUTICAL

+ millet
Index GRAIN

+ mistletoe
Index VISCUM

mixtures
Index CHEMISTRY, PHARMACEUTICAL

+ morphine derivatives
Index MORPHINANS

mucilages
Index PHARMACEUTIC AIDS

+ mycotoxicoses
Index MYCOTOXINS *poisoning

+ narcotic control
Index DRUG AND NARCOTIC CONTROL

+ narcotic laws
Index LEGISLATION, DRUG

needles
Index SYRINGES or SURGICAL EQUIPMENT if applicable

+ neuropharmacology
Index AUTONOMIC DRUGS or PSYCHOPHARMACOLOGY

neutron activation analysis
Index ACTIVATION ANALYSIS

+ ninhydrin
Index INDICATORS AND REAGENTS

+ oats
Index GRAIN

+ oils, essential
Index OILS, VOLATILE

+ ointment bases
Index PHARMACEUTIC AIDS and OINTMENTS

oral administration
Index *administration & dosage

+ packaging, drug
Index DRUG CONTAINERS AND CLOSURES

+ paramagnetic resonance
Index ELECTRON SPIN RESONANCE

particle size
Index POWDERS if applicable or CHEMISTRY, PHYSICAL or CHEMISTRY, PHARMACEUTICAL

patent medicines
Index NOSTRUMS

percolation
Index CHEMISTRY, PHARMACEUTICAL

+ petrolatum, liquid
Index MINERAL OIL

+ pharmacotherapy
Index DRUG THERAPY

+ phosphorescence
Index LUMINESCENCE

physical activity (of a drug)
Index CHEMISTRY, PHYSICAL if in vitro *pharmacodynamics if in vivo

pills
Index CAPSULES or TABLETS

+ plantago
Index PSYLLIUM

plasters
Index *administration & dosage or BANDAGES if applicable

+ podophyllin (Provisional)
Index PODOPHYLLUM

+ polytetrafluorethylene
Index FLUOROCARBON POLYMERS

pomades
Index OINTMENTS

posology
Index *administration & dosage

poultices
Index *administration & dosage or BANDAGES if applicable

+ prescription fees
Index FEES, PHARMACEUTICAL

+ prescription insurance
Index INSURANCE, PHARMACEUTICAL SERVICES

+ preservatives, pharmaceutical
Index PHARMACEUTIC AIDS

+ prolonged-action preparations
Index DELAYED-ACTION PREPARATIONS

proprietary drugs
Index NOSTRUMS

pulverization
Index POWDERS

purgatives
Index CATHARTICS

purification
Index *isolation & purification

+ pustulants
Index IRRITANTS

qualitative determination
Index *analysis

quantitative determination
Index *analysis

+ reagents
Index INDICATORS AND REAGENTS

rectal administration
Index *administration & dosage and SUPPOSITORIES or ENEMA if applicable

+ resinat
Index ION EXCHANGE RESINS

+ royal jelly
Index BEES

+ rubefacients
Index IRRITANTS

+ rye
Index GRAIN

+ saccharin
Index SWEETENING AGENTS

+ scillaren
Index SQUILL

+ scintillation counter
Index RADIOMETRY

+ scopolamine derivatives
Index TROPANES

+ sedatives
Index HYPNOTICS AND SEDATIVES

separation
Index *isolation & purification

+ snuff
Index TOBACCO

+ spectroscopy
Index SPECTRUM ANALYSIS

+ spices
Index CONDIMENTS

spirits
Index SOLUTIONS or ALCOHOL, ETHYL if applicable

standards
Index *standards

structure/activity relations
Index CHEMISTRY (NIM) and *pharmacodynamics

subarachnoid injection
Index INJECTIONS, INTRATHECAL

subdural injection
Index INJECTIONS, INTRATHECAL

+ sustained-release preparations
Index DELAYED-ACTION PREPARATIONS

syrups
Index VEHICLES and appropriate sugar term

+ tarichatoxin
Index TETRODOTOXIN

taste disguisers
Index FLAVORING AGENTS

+ teflon
Index FLUOROCARBON POLYMERS

TFE
Index FLUOROCARBON POLYMERS

+ therapeutics committee
Index PHARMACY AND THERAPEUTICS COMMITTEE

tincture
Index SOLUTIONS

tolerance
Index specific drug (IM) DRUG TOLERANCE (NIM)

+ toothpaste
Index DENTIFRICES

topical administration
Index *administration & dosage

triple-blind
Index with Check tag CLINICAL RESEARCH

+ tritons
Index SURFACE-ACTIVE AGENTS

troches
Index TABLETS

+ turbidimetry
Index DENSITOMETRY

+ tweens
Index SURFACE-ACTIVE AGENTS

unguents
Index OINTMENTS

urinary levels
Index *urine

utilization (as stockpiling)
Index specific drug (IM)
DRUG UTILIZATION (NIM)

utilization (metabolic)
Index *metabolism

+ varnish
Index PAINT

+ vesicants
Index IRRITANTS

weight (as measure)
Index WEIGHTS AND MEASURES

weight (of substances)
Index CHEMISTRY, PHYSICAL
or CHEMISTRY, PHARM-
ACEUTICAL as applicable

+ wetting agents
Index SURFACE-ACTIVE AGENTS

+ withdrawal symptoms
Index DRUG WITHDRAWAL SYMPTOMS

APPENDIX VI

Pharmacy, Pharmacology and Toxicology Journal Coverage in INDEX MEDICUS

This is a list of journals from the fields of pharmacy, pharmacology and toxicology indexed in INDEX MEDICUS. Select titles have been extracted from the Subject Listing of the LIST OF JOURNALS INDEXED IN INDEX MEDICUS (LJI) from under the entries "Anesthesiology", "Botany", "Chemistry", "Pharmacy", and "Pharmacology."

The list of journals here will be of greater value to searchers and users of MEDLARS products than to indexers. For this reason, we are citing for each journal title, the journal title code (JTC) which is used for searching the MEDLARS magnetic tapes for specific journals.

As in the LJI, the s) preceding a title indicates a journal indexed selectively.

Journal Title	Abbreviation	JTC
ACTA ANAESTHESIOLOGICA (Padova)	Acta Anaesth (Padova)	07G
ACTA ANAESTHESIOLOGICA BELGICA (Bruxelles)	Acta Anaesth Belg	082
ACTA ANAESTHESIOLOGICA SCANDINAVICA (Aarhus)	Acta Anaesth Scand	08O
ACTA PHARMACEUTICA HUNGARICA (Budapest)	Acta Pharm Hung	1P8
ACTA PHARMACEUTICA SINICA (Peking)	Acta Pharm Sinica	1PU
ACTA PHARMACEUTICA SUECICA	Acta Pharm Suec	1Q5
ACTA PHARMACOLOGICA et TOXICOLOGICA (Kobenhavn)	Acta Pharmacol (Kobenhavn)	1QG
ACTA PHYSIOLOGICA et PHARMACOLOGICA NEERLANDICA (Amsterdam)	Acta Physiol Pharmacol Neerl	1SW
ACTA POLONIAE PHARMACEUTICA (Warszawa)	Acta Pol Pharm	1VC
ACTUALITES PHARMACOLOGIQUES (Paris)	Actualites Pharmacol	2GQ
ADVANCES in CHEMOTHERAPY (New York)	Advances Chemother	2K3
ADVANCES in DRUG RESEARCH (London)	Advances Drug Res	2LB
ADVANCES in PHARMACEUTICAL SCIENCES (London)	Advances Pharm Sci	2OV

	Journal Title	Abbreviation	JTC
	ADVANCES in PHARMACOLOGY (New York)	Advances Pharmacol	20Z
	ADVANCES in TRACER METHODOLOGY (New York)	Advances Tracer Meth	2PM
	AGRESSOLOGIE (Paris)	Agressologie	31I
s)	AMERICAN JOURNAL of BOTANY (Oxford, Ohio)	Amer J Bot	3DF
	AMERICAN JOURNAL of HOSPITAL PHARMACY (Washington)	Amer J Hosp Pharm	3I0
	AMERICAN JOURNAL of PHARMACY and the SCIENCES SUPPORTING PUBLIC HEALTH (Philadelphia)	Amer J Pharm	3SE
	ANAESTHESIA (London)	Anaesthesia	4MC
	ANAESTHESIST (Berlin)	Anaesthesist	4MY
	ANESTHESIA and ANALGESIA; CURRENT RESEARCHES (Cleveland)	Anesth Analg (Cleveland)	4R8
	ANESTHESIE, ANALGESIE, REANIMATION (Paris)	Anesth Analg (Paris)	4RU
	ANESTHESIOLOGY (Philadelphia)	Anesthesiology	4SG
	ANNALES PHARMACEUTIQUES FRANCAISES (Paris)	Ann Pharm Franc	5UY
	ANNUAL REVIEW of PHARMACOLOGY (Palo Alto)	Ann Rev Pharmacol	61D
	ANTIBIOTICA (Roma)	Antibiotica (Roma)	6FQ

Journal Title	Abbreviation	JTC
ANTIBIOTICA et CHEMOTHERAPIA (Basel)	Antibiot Chemother (Basel)	6F4
ANTIBIOTIKI (Moskva)	Antibiotiki	6GC
ANTIMICROBIAL AGENTS and CHEMOTHERAPY (Detroit)	Antimicrob Agents Chemother	6HK
APPLIED THERAPEUTICS (Toronto)	Appl Ther	6KM
ARCHIV der PHARMAZIE und BERICHTE der DEUTSCHEN PHARMAZEUTISCHEN GESELLSCHAFT (Weinheim)	Arch Pharm (Weinheim)	8AC
ARCHIV fur TOXIKOLOGIE; FUEHNER-WIELANDS SAMMLUNG von VERGIFTUNGSFAELLEN (Berlin)	Arch Toxik	8JI
ARCHIVES INTERNATIONALES de PHARMACODYNAMIE et de THERAPIE (Gand)	Arch Int Pharmacodyn	7EK
ARCHIVIO ITALIANO di SCIENZE FARMACOLOGICHE (Modena)	Arch Ital Sci Farmacol	7MI
ARCHIVOS del INSTITUTO de FARMACOLOGIA EXPERIMENTAL (Madrid)	Arch Inst Farmacol Exp (Madrid)	7AW
ARHIV za HIGIJENU RADA i TOKSIKOLOGIJU (Zagreb)	Arh Hig Rada	8MK
ARZNEIMITTEL-FORSCHUNG (Aulendorf)	Arzneimittelforschung	91U

Journal Title	Abbreviation	JTC
BIOCHEMICAL PHARMACOLOGY (New York)	Biochem Pharmacol	9Z4
BOLLETTINO CHIMICO FARMACEUTICO (Milano)	Boll Chimicofarm	AK0
BRITISH JOURNAL of ANAESTHESIA (Altrincham)	Brit J Anaesth	AU0
BRITISH JOURNAL of PHARMACOLOGY (London)	Brit J Pharmacol	B00
BULLETIN of NATIONAL INSTITUTE of HYGIENIC SCIENCES (Tokyo)	Bull Nat Inst Hyg Sci (Tokyo)	BQ8
BULLETIN of the PARENTERAL DRUG ASSOCIATION (Philadelphia)	Bull Parenteral Drug Ass	BSG
BULLETIN of PHARMACEUTICAL RESEARCH INSTITUTE (Takatsuki)	Bull Pharm Res Inst (Takatsuki)	BSW
CAHIERS d'ANESTHESIOLOGIE (Paris)	Cah Anesth	CBV
CANADIAN ANAESTHETISTS' SOCIETY JOURNAL (Toronto)	Canad Anaesth Soc J	CG7
CANADIAN JOURNAL of PHYSIOLOGY and PHARMACOLOGY (Ottawa)	Canad J Physiol Pharmacol	CJM
CANCER CHEMOTHERAPY REPORTS (Washington)	Cancer Chemother Rep	CMP
CANCER CHEMOTHERAPY REPORTS, SUPPLEMENT	Cancer Chemother Rep [Suppl]	CMW

	Journal Title	Abbreviation	JTC
	CESKOSLOVENSKA FARMACIE (Praha)	Cesk Farm	CSU
s)	CHEMICAL and PHARMACEUTICAL BULLETIN (Tokyo)	Chem Pharm Bull (Tokyo)	CZP
	CHEMOTHERAPY (Basel)	Chemotherapy (Basel)	D15
	CLINICA TERAPEUTICA (Roma)	Clin Ter	DKN
	CLINICAL ANESTHESIA (Philadelphia)	Clin Anesth	DBS
	CLINICAL PHARMACOLOGY and THERAPEUTICS (St. Louis)	Clin Pharmacol Ther	DHR
	COMPTES RENDUS de la SOCIETE SUISSE de PHYSIOLOGIE, CHIMIE PHYSIOLOGIQUE et PHARMACOLOGIE issued with HELVETICA PHYSIOLOGICA et PHARMACOLOGICA ACTA (Basel)	C R Soc Suisse Physiol	CAS
	CURRENT MEDICINE and DRUGS (London)	Curr Med Drugs	DUR
	CURRENT THERAPEUTIC RESEARCH (New York)	Curr Ther Res	DWK
	DANSK TIDSSKRIFT for FARMACI (Kobenhavn)	Dansk T Farm	DYX
	DRUG and THERAPEUTICS BULLETIN (London)	Drug Ther Bull	EC8
	EKSPERIMENTAL'NAIA KHIRURGIIA i ANESTEZIOLOGIIA (Moskva)	Eksp Khir Anest	EE7

Journal Title	Abbreviation	JTC
ERGEBNISSE des PHYSIOLOGIE, BIOLOGISCHEN CHEMIE und EXPERIMENTELLEN PHARMAKOLOGIE (Berlin)	Ergebn Physiol	ELP
EUROPEAN JOURNAL of PHARMACOLOGY (Amsterdam)	Europ J Pharmacol	EN5
FARMACO; EDIZIONE PRATICA (Pavia)	Farmaco [Prat]	ESX
FARMACO; EDIZIONE SCIENTIFICA (Pavia)	Farmaco [Sci]	ET7
FARMACOGNOSIA; ANALES del INSTITUTO JOSE CELESTINO MUTIS de FARMACOGNOSIA (Madrid)	Farmacognosia	ETH
FARMAKOLOGIIA i TOKSIKOLOGIIA (Moskva)	Farmakol Toksik	ETR
FARMATSEVTYCHNYI ZHURNAL (Kiev)	Farm Zh (Kiev)	ESN
FARMATSIIA (Moskva)	Farmatsiia	EU6
FOLIA PHARMACOLOGICA JAPONICA (Kyoto)	Folia Pharmacol Jap	F2X
FOOD and COSMETICS TOXICOLOGY (Oxford)	Food Cosmet Toxic	F3W
FORTSCHRITTE der ARZNEIMITTELFORSCHUNG (Basel)	Fortschr Arzneimittelforsch	F55
GIORNALE ITALIANO di CHEMIOTERAPIA (Milano)	G Ital Chemioter	FBJ

Journal Title	Abbreviation	JTC
HELVETICA PHYSIOLOGICA et PHARMACOLOGICA ACTA (Basel)	Helv Physiol Pharmacol Acta	G5J
HINDUSTAN ANTIBIOTICS BULLETIN (Primpri)	Hindustan Antibiot Bull	G81
HIPPOKRATES (Stuttgart)	Hippokrates	G8B
INDIAN JOURNAL of PHYSIOLOGY and PHARMACOLOGY (Lucknow)	Indian J Physiol Pharmacol	GLD
INSTITUT FARMAKOLOGII i KHIMIOTERAPII UCHENYE ZAPISKI (Moskva)	Inst Farmakol Khimioter Uchen Zap	GOP
INTERNATIONAL ANESTHESIOLOGY CLINICS (Boston)	Int Anesth Clin	GP4
INTERNATIONAL JOURNAL of NEUROPHARMACOLOGY (Oxford)	Int J Neuropharmacol	GS6
INTERNATIONALE ZEITSCHRIFT fur KLINISCHE PHARMAKOLOGIE, THERAPIE und TOXIKOLOGIE (Munchen)	Int Z Klin Pharmakol Ther Toxik	GUY
JAPANESE JOURNAL of ANESTHESIOLOGY (Tokyo)	Jap J Anesth	KHR
JAPANESE JOURNAL of ANTIBIOTICS (Tokyo)	Jap J Antibiot	KHV
JAPANESE JOURNAL of PHARMACOLOGY (Kyoto)	Jap J Pharmacol	KO7
JOURNAL of the AMERICAN PHARMACEUTICAL ASSOCIATION (Washington)	J Amer Pharm Ass	H8N

	Journal Title	Abbreviation	JTC
	JOURNAL of ANTIBIOTICS (Tokyo)	J Antibiot (Tokyo)	HCF
	JOURNAL of CLINICAL PHARMACOLOGY and the JOURNAL of NEW DRUGS (New York)	J Clin Pharmacol	HTB
	JOURNAL of MEDICINAL CHEMISTRY (Washington)	J Med Chem	J0F
	JOURNAL of PHARMACEUTICAL SCIENCES (Washington)	J Pharm Sci	JO7
	JOURNAL of the PHARMACEUTICAL SOCIETY of JAPAN (Tokyo)	J Pharm Soc Jap	JON
	JOURNAL de PHARMACIE de BELGIQUE (Bruxelles)	J Pharm Belg	JNB
	JOURNAL of PHARMACOLOGY and EXPERIMENTAL THERAPEUTICS (Baltimore)	J Pharmacol Exp Ther	JP3
	JOURNAL of PHARMACY and PHARMACOLOGY (London)	J Pharm Pharmacol	JNR
s)	JOURNAL of SCIENTIFIC INSTRUMENTS; JOURNAL of PHYSICS E (London)	J Sci Instrum	K27
s)	LLOYDIA; a QUARTERLY JOURNAL of PHARMACOGNOSY and ALLIED BIOLOGICAL SCIENCES (Cincinnati)	Lloydia	L7A
	MEDICAL LETTER on DRUGS and THERAPEUTICS (New York)	Med Lett Drugs Ther	M52

	Journal Title	Abbreviation	JTC
	MEDICINA EXPERIMENTALIS (Basel)	Med Exper (Basel)	LY6
	MEDITSINSKAIA PROMYSHLENNOST' SSSR (Moskva)	Med Promyshl SSSR	MA6
s)	MIKROCHIMICA ACTA (Wien)	Mikrochim Acta	N06
	MINERVA ANESTESIOLOGICA (Torino)	Minerva Anest	N26
	MITTEILUNGEN der DEUTSCHEN PHARMAZEUTISCHEN GESELLSCHAFT und der PHARMAZEUTISCHEN GESELLSCHAFT der DDR issued with ARCHIV der PHARMAZIE und BERICHTE der DEUTSCHEN PHARMAZEUTISCHEN GESELLSCHAFT (Weinheim)	Mitt Deutsch Pharm Ges	NDQ
	MODERN TREATMENT (New York)	Mod Treatm	NG6
	MOLECULAR PHARMACOLOGY (New York)	Molec Pharmacol	NGR
	NATIONAL CLEARINGHOUSE for POISON CONTROL CENTERS; BULLETIN (Washington)	Nat Clearinghouse Poison Contr Cent Bull	NRS
	NAUNYN-SCHMIEDEBERGS ARCHIV fur PHARMAKOLOGIE und EXPERIMENTELLE PATHOLOGIE (Berlin)	Naunyn Schmiedeberg Arch Pharm Exp Path	NTQ
	OMNIA MEDICA et THERAPEUTICA (Pisa)	Omnia Med	OHC

Journal Title	Abbreviation	JTC
PATOLOGICHESKAIA FIZIOLOGIIA i EKSPERIMENTAL'NAIA TERAPIIA (Moskva)	Pat Fiziol Eksp Ter	ORQ
PESTICIDES MONITORING JOURNAL (Atlanta)	Pestic Monit J	OZV
PHARMACEUTICA ACTA HELVETIAE (Zurich)	Pharm Acta Helv	P0E
PHARMACEUTISCH WEEKBLAD (Den Haag)	Pharm Weekbl	P2X
PHARMACOLOGICAL REVIEWS (Baltimore)	Pharmacol Rev	P40
PHARMACOLOGY (Basel)	Pharmacology (Basel)	P43
PHARMACOLOGY for PHYSICIANS (Philadelphia)	Pharmacol Physicians	P3T
PHARMAKOTHERAPIA (Munchen)	Pharmacotherapia	P46
PHARMAZEUTISCHE PRAXIS; Beilage zur die PHARMAZIE (Berlin)	Pharm Prax	P27
PHARMAZIE (Berlin)	Pharmazie	P4D
PLANTA MEDICA (Stuttgart)	Planta Med	P9F
PROCEEDINGS of the WESTERN PHARMACOLOGY SOCIETY (Seattle)	Proc West Pharmacol Soc	PZ2
PROGRESS in CHEMICAL TOXICOLOGY (New York)	Progr Chem Toxic	Q0N
PROGRESS in MEDICINAL CHEMISTRY (London)	Progr Med Chem	Q31
PSYCHOPHARMACOLOGIA (Berlin)	Psychopharmacologia (Berlin)	QGE

	Journal Title	Abbreviation	JTC
	PSYCHOPHARMACOLOGY BULLETIN; NATIONAL CLEARINGHOUSE for MENTAL HEALTH INFORMATION (Bethesda)	Psychopharmacol Bull	QG1
	RASSEGNA INTERNAZIONALE di CLINICA e TERAPIA (Napoli)	Rass Int Clin Ter	QV5
s)	RESIDUE REVIEWS; RESIDUES of PESTICIDES and OTHER FOREIGN CHEMICALS in FOODS and FEEDS (New York)	Residue Rev	R7T
s)	REVIEW of SCIENTIFIC INSTRUMENTS (New York)	Rev Sci Instrum	T62
	REVISTA BRASILEIRA de ANESTESIOLOGIA (Rio de Janeiro)	Rev Brasil Anest	RG1
	REVISTA ESPANOLA de ANESTESIOLOGIA y REANIMACION (Barcelona)	Rev Esp Anest	RSX
	REVUE d'IMMUNOLOGIE et de THERAPIE ANTIMICROBIENNE (Paris)	Rev Immun (Paris)	S7L
	SEMAINE THERAPEUTIQUE (Paris)	Sem Ther	UMT
	STEROIDS (San Francisco)	Steroids	V10
s)	SUDHOFF'S ARCHIV; VIERTELJAHRSSCHRIFT fur GESCHICHTE der MEDIZIN und der NATURWISSENSCHAFTEN der PHARMAZIE und der MATHEMATIK (Wiesbaden)	Sudhoff Arch	V84

Journal Title	Abbreviation	JTC
TERATOLOGY; JOURNAL of ABNORMAL DEVELOPMENT (Philadelphia)	Teratology	VM8
THERAPEUTIQUE (Paris)	Therapeutique	VPZ
THERAPIE (Paris)	Therapie	VQ6
THERAPIE der GEGENWART (Berlin)	Ther Gegenw	VOQ
TOXICOLOGY and APPLIED PHARMACOLOGY (New York)	Toxic Appl Pharmacol	VWO
TOXICON (Oxford)	Toxicon	VWT

NATIONAL LIBRARY OF MEDICINE
Health, Education, and Welfare, Public Health Service
U.S. Department of Health, Education, and Welfare, Public Health Service
Bethesda, Md.

NATIONAL LIBRARY OF MEDICINE
Health, Education, and Welfare, Public Health Service
U.S. Department of Bethesda, Md.

BOUND BY HM
OCT 2 1969

NATIONAL LIBRARY OF MEDICINE
NLM 02239356 8